

# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

**UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**

**June 02, 2004**

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OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT  
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.**

**APPLICATION NUMBER: 60/458,491**

**FILING DATE: March 28, 2003**

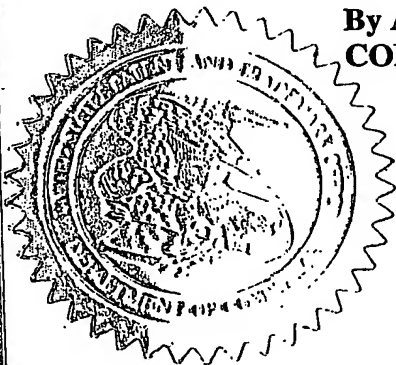
**RELATED PCT APPLICATION NUMBER: PCT/US04/09618**

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**T. LAWRENCE  
Certifying Officer**

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3-31 60958491.032803 *Alper*

03/28/03

1c882 U.S. PTO

# PROVISIONAL APPLICATION COVER SHEET

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70038  
Express Mail Label No. EV 208 517 785 US  
Date of Deposit: March 28, 2003

1c979 U.S. PTO

60/458491

03/28/03

## INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright	Debbie		North Andover, MA
Amara	Ryan		Stoneham, MA
Brown	Erik		Allston, MA
MacAdam	David		Mullbury, MA

☐ Additional inventors are being named on the separately numbered sheets attached hereto.

TITLE OF THE INVENTION (280 characters max)

SHAPE SHIFTING ELECTRODE GEOMETRY FOR ELECTROPHYSIOLOGY CATHETERS

CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:



23628

## ENCLOSED APPLICATION PARTS (check all that apply)

☒ Specification - Number of Pages = 2

☐ Drawing(s) - Number of Sheets

☐ Application Data Sheet, See 37 CFR 1.76

☒ Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No

☐ Yes, the name of the U.S., Government Agency and the Government Contract Number are:

☐ Other:

## METHOD OF PAYMENT (check all that apply)

☒ A check is enclosed to cover the Provisional Filing Fees.

☐ The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed.

☐ Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT

\$ 160.00

Respectfully submitted,

March 28, 2003

Date

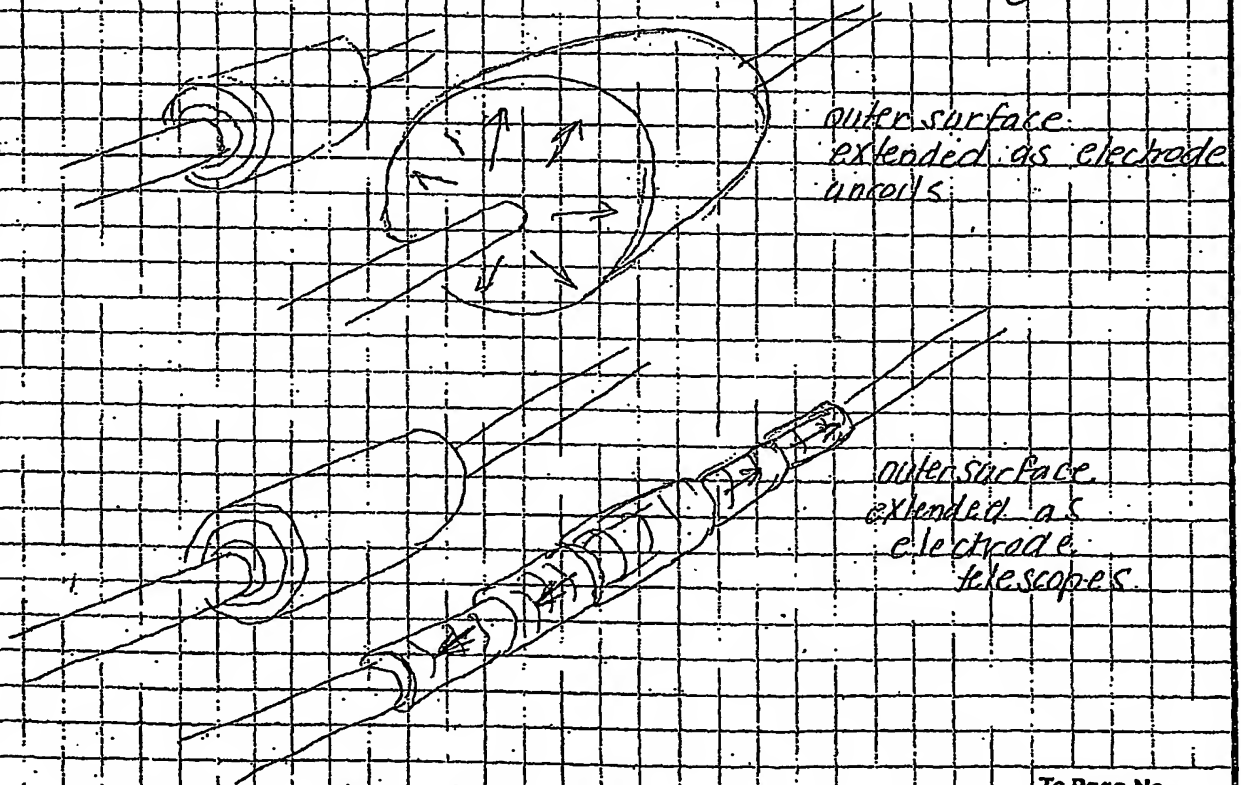
*James H. Morris*  
James H. Morris, Reg. No. 34,681  
Telephone No.: 617-720-3500

# TITLE Shape Shifting Electrode Geometry

From Page No. \_\_\_\_

Margan Analysis study showed that extending the surface of the electrode produces a larger lesion. The larger geometry pushes the point that the potential begins to drop off further into the domain. The reach of the potential field is larger for electrodes having an outer surface that extends out further into the domain, extending toward the boundaries of the domain.

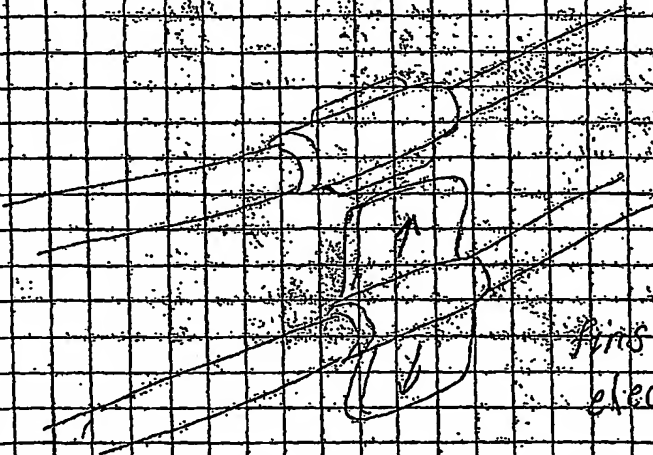
For clinical reasons, it is undesirable to have an electrode that is excessively large. One concept would be to have an electrode that started off with a compact geometry when moving through the vasculature. At the site of energy application the outer surface of the electrode could be extended to improve the lesion depth as necessary.



To Page No. \_\_\_\_

TITLE Shape Shifting Geometry

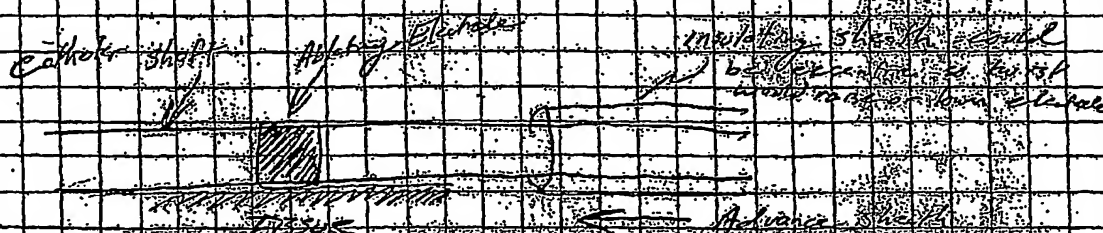
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Lines extend out from  
electrode surface

Extending the reach  
of the field

thus increasing the  
lesion depth



Don't  
3/23/03  
Witness  
[Signature]

Advance Sheath  
to keep off  
electrode and move  
the gap in  
presence of insulating  
layer. Field is applied  
across cathode.

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